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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,697	03/16/2004	Yong Cheol Park	0465-1157P	1773

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EXAMINER

DANIELSEN, NATHAN ANDREW

ART UNIT PAPER NUMBER

2652

DATE MAILED: 03/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/800,697		PARK ET AL.	
	Examiner		Art Unit	
	Nathan Danielsen		2652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/345380.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-13 are pending. The application is a divisional application of 09/345,380.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09/345,380, filed on 30 June 1999.

Specification

3. The disclosure is objected to because of the following informalities: the paragraph claiming priority to "co-pending Application No. 09/345,380" should be amended to indicate that 09/345,380 is now US Patent 6,771,575. Appropriate correction is required.

Claim Objections

4. Claim 1 is objected to because "including defect management area" should be --including a defect management area--, "including a defect management information" should be --including defect management information--, and "a position of defective area, comprising" should be --a position of a defective area, the method comprising--. Claim 8 is objected to because "a position of defective area, comprising" should be --a position of a defective area, the method comprising--. Claim 10 is objected to because the first instance of "recording/reproducing device" should be --a recording/reproducing device-- and "recording an information to indicate that the defective block has been listed in the defect management information has not been replaced" should be --recording an information to indicate that the defective block that has been listed in the defect management information has not been replaced--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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5. Claims 1, 4, 5, 7-10, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Fukushima (US Patent 5,237,553).

Regarding claim 1, Fukushima discloses a method for managing a defective area on a recording medium, the recording medium including defect management area (figure 2) including a defect management information (C, G, and R list areas in figure 2), which indicates a position of defective area, comprising the steps of:

receiving a command for real time recording or reproducing (step S50 in figure 6: "upon reading the device command taken into the interface control circuit 11, the microprocessor 1 decides the defect management mode by checking from the zone identifier in which the data recording area is included, sequential access zone or random access zone" (col. 8, lines 34-44 and figures 1 and 6));

determining whether a found defective block is listed in the defect management information (step S56 in figure 6 and col. 9, lines 13-30); and

skipping the defective block and recording or reproducing data in a next available block if the found defective block has been listed in the defect management information (step S56 and col. 9, lines 13-30).

Regarding claim 4, Fukushima discloses the method of claim 1, further comprising:

recording an information to indicate that the defective block has been listed in the defect management information and has not been replaced (step S58 in figure 6: "the updated G defect list is recorded in the G list area in a manner similar to that of (S18) unless the total number of defective sectors stored in the C and G lists exceeds the permissible range" (col. 9, lines 39-50)).

Regarding claim 5, Fukushima discloses the method of claim 4, wherein the information is to indicate that the defective block is skipped during the real time recording or reproducing

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("the sequential access zone is composed of a data area for recording user data, a C list area for recording a C(certification) defect list which manages defective sectors detected in the data area through certification in the formatting process, and a G list area for recording a G(grown) defect list which manages defective sectors newly detected in the data managing process" (col. 4, lines 27-34)).

Regarding claim 7, Fukushima discloses the method of claim 1, wherein the defect management information is PDL (Primary Defect List) and/or SDL (Secondary Defect List) ("Fig. 9(a) shows the data of the Primary Defect List and Fig. 9(b) shows the data of the Secondary Defect List" (col. 1, lines 41-43)).

Regarding claim 8, Fukushima discloses a method for managing a defective area on a recording medium, the recording medium including a defect management area (figure 2) including defect management information (C, G, and R list areas in figure 2), which indicates a position of defective area, comprising the steps of:

receiving a command for reproducing (see citation of step S50 in claim 1);

determining whether a found defective block has been listed in the defect management information and the defective block has not been replaced with an available block of spare area based on an information, the information indicating whether the defective block is replaced with an available block of spare area (determined by whether the defective block address has been listed in the C, G, or R defect lists (col. 8, lines 48-53)); and

controlling the reproduction such that an optical pickup skips the defective block and reproduces the data in a next available block if the found defective block has been listed in the defect management information and the defective block has not been replaced with an available block of spare area ("data is recorded while the

C defect list and G defect list are skipped in the sequential access zone, thereby enabling sequential reproduction of the real time data" (col. 3, lines 45-48)).

Regarding claim 9, Fukushima discloses the method of claim 8, wherein the defect management information is PDL (Primary Defect List) and/or SDL (Secondary Defect List) (see claim 7 for citation).

Regarding claim 10, Fukushima discloses a system for managing a defective area on a recording medium, the recording medium including a defect management area (figure 2) including defect management information (C, G, and R list areas in figure 2), which indicates a position of defective area, comprising:

recording/reproducing device (figure 1) to record or reproduce on or from the recording medium, the recording/reproducing device receiving a command for real time data recording or reproducing (step S50 in figure 6: "the host computer 12 sends out a device command (WRITE command)" (col. 8, lines 34-44)), checking whether or not a found defective block is listed in the defect management information (step S56 in figure 6: "the microprocessor 1 changes the logical address set by the device command to a physical address on the disk with referring to the C defect list" (col. 9, lines 13-30)), skipping the defective block and recording data in a next available block if the found defective block has been listed in the defect management information (step S56 in figure 6), and recording an information to indicate that the defective block has been listed in the defect management information has not been replaced (see citation of step S58 in claim 4); and

host device (host computer 12), coupled to the recording/reproducing device, to control a recording/reproducing device, the host device transferring the command for real

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time data recording or reproducing to the recording/reproducing device (see citation of step S50 above), and controlling the recording/reproducing device to record or reproduce data according to the command (see citation of step S58 above).

Regarding claim 13, Fukushima discloses the system of claim 10, wherein the command further includes a recoding or reproducing speed (suggested by "Random access data controlled by, e.g., UNIX or MS-DOS are dispersedly recorded on the disk, so that no problem occurs in accessing the data even when the defective sectors in the user zone are replaced with spare sectors in the spare area according to this algorithm. However, if the spare sector is accessed during the reproduction of real time data such as images or sounds that needs continuity, a seek operation occurs between the user zone and spare area, resulting in a time gap in the reproduction of data" (col.. 2, lines 44-53) in that an increase in recording/reproducing speed would be needed over "real time" speed in order to maintain continuity of "real time" data where user data such as data files and computer programs would not be subject to such requirements and could be recorded/reproduced at higher speeds).

Claim Rejections - 35 USC § 103

6. Claims 2, 3, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukushima in view of Kulakowski et al (hereinafter Kulakowski) (US Patent 5,303,219).

Regarding claim 2, Fukushima discloses everything claimed, as applied to claim 1. However, Fukushima fails to disclose where the method of claim 1 further comprises:

identifying a number of blocks skipped during the real time recording or reproducing; and outputting an information indicating the number of blocks skipped.

In the same field of endeavor, Kulakowski discloses where the method of claim 1 further comprises:

identifying a number of blocks skipped during the real time recording or reproducing (indicated by "when a disk is loaded into a drive the DMA structure is loaded into RAM; at this point the controller can tally the defective sectors; when a threshold of spare sectors have been used, for example, when 70% of the spare sectors have been used, an error message is generated and sent to the host; the host then sends a "Request Sense" command to the drive and the sense data shows the percent of spares used" (col. 5, lines 20-27)); and

outputting an information indicating the number of blocks skipped (see above citation).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have identified and output the number of blocks skipped during a recording/reproducing operation, as taught by Kulakowski, for the purpose of determining the cause of the number of defect errors in order to attempt a reclamation of previously defective sectors (col. 5, lines 20-41).

Regarding claim 3, Fukushima discloses everything claimed, as applied to claim 2.

However, Fukushima fails to disclose where the method of claim 2 further comprises:

updating a remaining recording capacity of the recording medium based on the outputted information.

In the same field of endeavor, Kulakowski discloses where the method of claim 2 further comprises:

updating a remaining recording capacity of the recording medium based on the outputted information (see above citation where prior to the "Request Sense" command, the host does not know how much of the disk's spare areas have been used, and after the response has been received, the capacity has been updated).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have updated a remaining recording capacity, as taught by Kulakowski, for the purpose of determining the cause of the number of defect errors in order to attempt a reclamation of previously defective sectors (col. 5, lines 20-41).

Regarding claim 11, Fukushima discloses everything claimed, as applied to claim 10. However, Fukushima fails to disclose where the recording/reproducing device outputs an information for indicating a number of blocks skipped during a real time recording or reproducing to the host, and the host receives the information from the recording/reproducing device, detects an amount of data recorded based on the information, and updates a remaining capacity of the recording medium.

In the same field of endeavor, Kulakowski discloses where the recording/reproducing device outputs an information for indicating a number of blocks skipped during a real time recording or reproducing to the host, and the host receives the information from the recording/reproducing device, detects an amount of data recorded based on the information (based on the threshold, the host knows what percentage of the spare areas have been recorded to), and updates a remaining capacity of the recording medium (see the citations in claims 2 and 3 above for the remainder of the limitations not directly addressed).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have identified and output the number of blocks skipped during a recording/reproducing operation, detected an amount of data recorded, and updated a remaining capacity, as taught by Kulakowski, for the purpose of determining the cause of the number of defect errors in order to attempt a reclamation of previously defective sectors (col. 5, lines 20-41).

7. Claims 6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukushima in view of Otsuka (US Patent 6,094,723).

Regarding claims 6 and 12, Fukushima discloses everything claimed, as applied to claims 1 and 10, respectively. However, Fukushima fails to disclose where the receiving step further includes receiving a logical block address to designate a recording or reproducing position and a transfer length information to identify an amount of data to be recorded or reproduced.

In the same field of endeavor, Otsuka discloses where the receiving step further includes receiving a logical block address to designate a recording or reproducing position and a transfer length information to identify an amount of data to be recorded or reproduced ("the host computer 2 is set such that the install system (2e) directly sends a logical address, the length of data, and a command to the device driver 2b to perform read/write operations in the install management file area" (col. 16, lines 47-53)).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have indicated a variable amount of data to be written, as taught by Otsuka, for the purpose of allowing the file system to regard the area as an unused area or as a defective area (col. 16, lines 54-57).

Claim Rejections - 35 USC § 103

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan Danielsen whose telephone number is (571) 272-4248. The examiner can normally be reached on Monday-Friday, 8:30 AM - 4:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, A.L. Wellington can be reached on (571) 272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nathan Danielsen
03/06/2006



WAYNE YOUNG
SUPERVISORY PATENT EXAMINER